



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005TX197B

Title: Spatial Patterns in Wetland Nutrient Biogeochemistry: Implications for Ecosystem Functions

Project Type: Research

Focus Categories: Wetlands, Geochemical Processes, Ecology

Keywords: periphyton, macrophyte, elemental composition

Start Date: 03/01/2005

End Date: 02/28/2006

Federal Funds: \$5,000

Non-Federal Matching Funds: \$12,350

Congressional District: 17th

Principal Investigators:

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Abstract

This project will focus on investigating how nitrogen and phosphorus cycling at the Lake Waco Wetlands has the potential to affect ecosystem functions. Goals of the study are to use spatial maps to characterize trends in surface water chemistry and nitrogen transformation in wetland sediments; to characterize possible relationships between primary productivity, nitrogen fixation, and stable isotope composition in periphyton along the wetland nutrient gradient; and to examine how the addition of nitrogen, phosphorus, and organic carbon may affect primary production, bacterial production, and periphyton populations. The TWRI funds will be used to incorporate stable isotope analyses of carbon, nitrogen, and sulfur compounds into experiments at the wetland site. Results of the project will provide new information about the extent to which nutrient concentrations in wetland ecosystems may change as they migrate further from the water source. This data will be important in helping water resources managers determine how nutrient cycling in wetlands may affect nearby ecosystems.